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B.Y. Morrison Memorial Lecture

U.S. Department of Agriculture
Agricultural Research Service



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SPRAY APPLICATION
TECHNOLOGY:
A CRITICAL COMPONENT FOR
REDUCING PESTICIDE USAGE

Martin J. Bukovac

1994 B.Y. Morrison Memorial Lecture
Agricultural Research Service
U.S. Department of Agriculture

Cosponsored by
American Society
for Horticultural Science

August 9, 1994

The B.Y. Morrison Memorial Lecture series was established in 1968 by the Agricultural Research Service to honor the memory of Benjamin Y. Morrison and to recognize scientists who have made outstanding contributions to ornamental horticulture and other environmental sciences, to encouraging the use of these sciences, and to stressing the urgency of preserving and enhancing natural beauty.

Benjamin Y. Morrison (1891-1966) was a pioneer in ornamental horticulture and the first director of the U.S. National Arboretum in Washington, DC. A scientist, landscape architect, plant explorer, author, and lecturer, he advanced the science of botany in the United States and fostered broad international exchange of ornamental plants. His legacy to the American public includes dozens of new ornamental plants, among them the famous Glenn Dale azaleas.

Candidates may be suggested for the Lectureship each year in January by sending a letter of nomination and a current curriculum vitae to Lecture Coordinator, ARS Information Staff, Room 448, 6303 Ivy Lane, Greenbelt, MD 20770. An impartial committee rates all nominees, and a final selection is made by the ARS administrator.

The Agricultural Research Service, the principal scientific research agency of the U.S. Department of Agriculture, has a responsibility to develop knowledge and technology for the benefit of farmers and consumers.

This year's cosponsor for the B.Y. Morrison Lecture is the American Society for Horticultural Science, a professional society dedicated to promoting national and international interest in scientific research and education in all branches of horticulture.



artin J. Bukovac is a renowned research scientist and teaching professor in the field of horticulture. For the past 30 years, he has specialized in basic and applied research on plant growth regulators and their uptake by plants as well as the chemistry, structure, and permeability of the plant cuticle, considered to be the prime barrier to the penetration of foliar-applied chemicals.

Dr. Bukovac's research has led to new practices and patents in the control of flower and fruit development. Much of the current success of mechanical harvesting of cherries directly depends on his work on fruit abscission.

One of his research papers, "Reproductive responses of lettuce to gibberellin as influenced by seed vernalization, photoperiod, and temperature" (1958, Proc. Amer. Soc. Hortic. Soc.), was selected to be included in "Classic Papers in Horticultural Science."

Dr. Bukovac is currently a University Distinguished Professor at Michigan State University. Adding to his contributions as a researcher, Dr. Bukovac has been an outstanding teacher of undergraduate and graduate students.

In addition, he has been a member of numerous national committees, including the National Research Council, and has served as the U.S. representative to the Council of the International Society for Horticultural Science.

Dr. Bukovac is a Fellow of the American Society for Horticultural Science and was its president in 1974-1975. He was elected to the National Academy of Sciences in 1983, and he was a National Science Foundation Senior Postdoctoral Fellow at Oxford and Bristol Universities in England in 1965-1966.

Among his many honors and awards are the Meadows, Gourley, Blake, and Miller Awards from the American Society of Horticultural Science; the Hoagland Award, American Society of Plant Physiologists; the Meritorious Research Award, American Horticultural Society; the Hatch Memorial Medallion, National Association State Universities and Land-Grant Colleges; and the Monselise Memorial Lecture, Hebrew University of Jerusalem, Israel. And one of the 14 volumes of Horticultural Reviews that have been dedicated to outstanding scientists was dedicated to Dr. Bukovac.

PREVIOUS LECTURERS

1993, George C. Papavizas, Research Leader (retired), Biocontrol of Plant Diseases Laboratory, Agricultural Research Service, U. S. Department of Agriculture.

1992, Conrad A. Skimina, Research Director, Monrovia Nursery Co., Azusa, CA.

1991, Arthur Kelman, Distinguished Scholar, North Carolina State University.

1990, Marvin E. Jensen, Director, Colorado State University, Institute for Irrigation Management.

1989, Mildred E. Mathias, Emeritus Professor of Botany, University of California at Los Angeles.

1988, Richard W. Lighty, Director, Mt. Cuba Center for the Study of Piedmont Flora, Greenville, DE.

1987, H.B. Tukey, Jr., Professor and Director of the Center for Urban Horticulture, Washington Park Arboretum, University of Washington-Seattle.

1986, Alex Shigo, Shigo and Trees, Associates, Durham, NH.

1985, S. Dillon Ripley, Secretary Emeritus, Smithsonian Institution.

1984, John Cairns, Jr., Distinguished Professor of Biology and Director, Center for Environmental Studies, Virginia Tech.

1983, Vernon W. Ruttan, Professor, Agricultural and Applied Economics, Department of Economics, University of Minnesota

1982, August Kehr, retired Agricultural Research Service Coordinator for National and Regional Research Programs on Vegetable, Florist, and Nursery Crops.

1981, John Creech, Past Director, National Arboretum.

1980, John Naisbitt, Publisher, *The Trend Report*.

1979, William H. Whyte, author and conservationist.

1978, Charles Lewis, Administrator, Collections Program, The Morton Arboretum.

1977, Russell Peterson, President, New Directions.

1976, William K. Reilly, President, The Conservation Foundation.

1975, Nash Castro, General Manager, Palisades Interstate Park Commission.

1974, Dame Barbara Ward, President, International Institute for Environmental Affairs.

1973, John Mahlstedt, Professor of Horticulture, Iowa State University.

1972, René J. Dubos, Professor Emeritus, The Rockefeller University.

1971, Ian L. McHarg, Chairman, Department of Landscape Architecture and Regional Planning, University of Pennsylvania.

1970, Arie Jan Haagen-Smit, Chairman, President's Task Force on Air Pollution.

1969, Patrick Horsburgh, Professor of Architecture and creator of the Graduate Program in Environic Studies, Notre Dame University.

1968, Lady Bird Johnson, First Lady of the United States.

